

## Abstract

A plate heat exchanger for indirect heat exchange of several fluid flows (30, 40, 50) with a heat transfer medium/cooling medium (10, 20) in a heat exchanger core (9) has a plurality of  
5 heat exchange passages within the core for the heat transfer medium/cooling medium (10, 20), a first fluid flow (30, 40, 50) and a second fluid flow (30, 40, 50). All heat exchange passages for the first fluid flow (40) are located in a first component area, and all heat exchange passages for the second fluid flow (30) are located in a second component area. The first and the second component areas do not intersect and each extend over the entire height of the heat exchanger  
10 core (9). The heat exchanger is particularly suitable for use in air-separation processes.